DB-Gate™

The Remote Database Access Component of iSecurity

iSecurity

User Manual

Version 1.5

RAZ-LEE™
The iSeries Security Experts

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Record your Product Authorization Code Here:

Computer Model:	
Serial Number:	
Authorization Code	

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About This Manual

This user guide is intended for system administrators and security administrators responsible for the implementation and management of security on AS400 systems. However, any user with basic knowledge of AS400 operations will be able to make full use of this product after reading this book.

Product Documentation Overview

Raz-Lee takes customer satisfaction seriously. Our products are designed for ease of use by personnel at all skill levels, especially those with minimal AS400 experience. The documentation package includes a variety of materials to get you familiar with this software quickly and effectively.

Printed Materials

This user guide is the only printed documentation necessary for understanding this product. It is available in user-friendly PDF format and may be displayed or printed using Adobe Acrobat Reader version 4.0 or higher. Acrobat Reader is included on the product CD-ROM.

This manual contains concise explanations of the various product features as well as step-by-step instructions for using and configuring the product.

Online Help

AS400 context sensitive help is available at any time by pressing the **F1** key. A help window appears containing explanatory text that relates to the function or option currently in use. Online help will shortly be available in Windows help format for viewing on a PC with terminal emulation.

Typography Conventions

- Menu options, field names, and function key names are written in **Bold**.
- References to chapters or sections are written in *Italic*.
- OS/400 commands and system messages are written in ***Bold Italic***.
- Key combinations are separated by a dash, for example**:** Shift-Tab.
- Emphasis is written in **Times New Roman bold**.

Other iSecurity Products

Raz-Lee's iSecurity is an integrated, state-of-the-art security solution for all System i servers, providing cutting-edge tools for managing all aspects of network access, data, and audit security. Its individual components work together transparently, providing comprehensive "out-of-the-box" security.

Other iSecurity products include:

Change Tracker

Change Tracker automatically tracks modifications in the software and file structure within production libraries. Changes are tracked at both the object and source levels. It does not require any special actions by programmers.

COMMAND

COMMAND monitors and filters commands and its parameters before they are run, enabling you to control each parameter, qualifier or element, in conjunction with the context in which it is about to run. Options include Allow, Allow with Changes and Reject. It includes a comprehensive log, proactive alerting and easily integrates with SIEM.

AOD

Authority on Demand provides an advanced solution for emergency access to critical application data and processes, which is one of the most common security slips in System i (AS/400) audits. Current manual approaches to such situations are not only error-prone, but do not comply with regulations and often-stringent auditor security requirements.

Capture

Capture silently captures and documents user screens for tracking and monitoring, without any effects on system performance. It also preserves job logs for subsequent review. Capture can run in playback mode and can be used to search within texts.

AP-Journal

AP-Journal automatically manages database changes by documenting and reporting exceptions made to the database journal.

Anti-Virus

Anti-Virus is a dedicated iSeries-specific product engineered to provide full protection to the server, its file contents, and resident iSeries or System i dedicated software.

Visualizer

Visualizer is an advanced DWH statistical tool with state-of-the-art technology. This solution provides security-related data analysis in GUI and operates on summarized files; hence, it gives immediate answers regardless of the amount of security data being accumulated.

Firewall

Firewall protects and secures all types of access, to and from the System i, within or outside the organization, under all types of communication protocols. Firewall manages user profile status, secures entry via pre-defined entry points, and profiles activity by time. Its Best Fit algorithm determines the validity of any security-related action, hence significantly decreasing system burden while not compromising security.

Audit

Audit is a security auditing solution that monitors System i events in real-time. It includes a powerful query generator plus a large number of predefined reports. Audit can also trigger customized responses to security threats by means of the integrated script processor contained in Action.

Action

Action automatically intercepts and responds to security breaches, system activity events, QHST contents, and other message queues. Inquiring messages can be automatically answered. Alerts are sent by e-mail, SMS, pagers, or the message queues. Command scripts with replacement variables perform customized corrective actions, such as terminating a user session or disabling a user profile.

View

View is a unique, patent-pending, field-level solution that hides sensitive fields and records from restricted users. This innovative solution hides credit card numbers, customer names, etc. Restricted users see asterisks or zeros instead of real values. View requires no change in existing applications. It works for both SQL and traditional I/O.

Screen

Screen protects unattended terminals and PC workstations from unauthorized use. It provides adjustable, terminal- and user-specific timeout capabilities.

Password

Password provides a first-tier wall of defense for users by ensuring that user passwords cannot be easily cracked.

Assessment

Assessment checks your ports, sign-on attributes, user privileges, passwords, terminals, and more. Results are instantly provided, with a score of your current network security status with its present policy compared to the network if iSecurity were in place.

Chapter 1: Introducing DB-Gate

Raz-Lee Security's DB-Gate, part of the iSecurity suite, lets you open concurrent and transparent SQL connections to numerous types of remote data sources and databases. You can do this on any IBM or non-IBM platform using STRSQL and compile using CRTSQL for programs which refer to these databases.

DB-Gate is a client-only product, so it saves you both money and time you would otherwise require to integrate new hardware or set up a complicated API.

System Requirements

DB-Gate requires the V5R3 operating system or higher.

Starting DB-Gate

To begin using DB-Gate, type *STRDB* on any command line. The main screen is displayed.

You can access the different features from the main DB-Gate screen. The various feature groups are described in the following chapters:

- Remote DB Definitions
- DB Drivers
- Activity Log
- General Configuration and Maintenance

```
DBMENU                          DB-Gate                        iSecurity
                                                           System: S520
Select one of the following:                           *Patent-Pending*

Remote DB Definitions                   Activity Log
 1. Work with Directory Entries         41. Display Log


DB Drivers                              Test Drive
11. Work with DB Drivers                51. Start SQL
15. Drivers & Licenses Folders          55. Work with SQL* program sources


Auto Injection of Remote User ID        General
21. Work with Server Authentication     81. System Configuration
                                        82. Maintenance Menu



Selection or command
===> █
_____

F3=Exit    F4=Prompt   F9=Retrieve   F12=Cancel
F13=Information Assistant  F16=AS/400 main menu
```

Main DB-Gate Screen

Why You Need DB-Gate

IBM AS/400 users often require access to remote, non-DB2 databases that do not support DRDA server behavior, such as Oracle, MS-SQL and Derby. These databases run on various operating systems and use standard languages (i.e. SQL).

Typical Remote Access Limitations

To successfully access remote databases, companies have selected products based on either of the following limited methods:

- Using ambiguous or non-standard APIs that are not defined through RDBDIRE (relational Database Directory Entry) and therefore make no use of an ARD program

- Selecting a client-server configuration that requires additional hardware

These options are cumbersome, require special settings which often prevent users from fully utilizing standard SQL commands on the AS/400 and often include hidden infrastructure costs.

DB-Gate Benefits

- "Opens" the entire non-DB2 spectrum of databases

- Greatly expands programmer's capabilities when working with non-DB2 databases

- Reduces the need for redundant data and ETL (extract, transformation, load) data manipulation products

- Eliminates the need for *SQLPKG, even when accessing another DB2 database (including one on the AS/400)

- Unique technology enables transparent access to any database (MySQL, ORACLE, MS SQL, DB2, Informix, SQLite) or data source (e.g., Excel) which resides on any IBM or non-IBM platform using STRSQL, STRQM or programs in languages such as RPG, Cobol, etc. (compiled using CRTSQL...)

- Integration with the STRSQL lets you prompt to see the Table names, Column names, and more

- Expands IBM i-based DRDA functionality by enabling transparent connectivity with JDBC databases not supported by DRDA

- Uses standard SQL syntax and is based upon standard OS/400 functionality – so there is virtually no learning curve to get up and running

- Remote Server Authentication that makes use of the IBM Server Authentication Entries, injecting them seamlessly when needed and eliminating the need to remember and re-enter a user name and password for each CONNECT to a remote DB

- Provides detailed traceability logs.

DB-Gate Restrictions

The following functions are not supported:

- Database large objects (BLOBs, CLOBs, DBCLOBs)

- Data links

- User IDs longer than ten characters

- Passwords longer than ten characters

- Stored procedure result sets

- SQL statements longer than 32K

- Stored procedures with Commit on Return

- Scrollable cursors

- Multi-row input

- Extended diagnostics

- RDB aliases

Note about Commitment Control:

When using an ARDPGM, the system enforces the use of commitment control. If for example session attributes for commitment control is set to *NONE, the system will change this setting immediately after the connection.

An RDB entry that is based on ARDPGM is always considered as a remote connection and thus can not be assigned *NONE or *NC for commitment control.

```
            Commitment Control - Help

 Select the type of commitment control.  The possible
 values are:

 *NONE or *NC
     Specifies that commitment control is not used.
     Uncommitted changes in other jobs can be seen.  If the
     SQL DROP COLLECTION statement is included in the
     program, *NONE or *NC must be used.  If a relational
     database is specified on the RDB parameter and the
     relational database is on a system that is not on an
     iSeries, *NONE or *NC cannot be specified.
```

Native OS 400 Text Based User Interface

DB-Gate is designed to be a user-friendly product. The user interface follows standard System i CUA conventions. All product features are available via the menus, so you are never required to memorize arcane commands.

Many features are also accessible via the command line, for the convenience of experienced users.

Menus

Product menus allow for easy access to all features with a minimum of keystrokes. Menu option numbering and terminology are consistent throughout this product as well as other Raz-Lee products. To select a menu option, simply type the option number and press Enter. The command line is available from nearly all product menus. If the command line does not appear (and your user profile allows use of the command line), press F10 to display it.

Data Entry Screens

Data entry screens include many convenient features such as:

- Pop-up selection windows

- Convenient option prompts

- Easy-to-read descriptions and explanatory text for all parameters and options

■ Search and filtering with generic text support.

The following describes the different data entry screens.

■ To enter data in a field, type the desired text and then press **Enter** or **Field Exit**

■ To move from one field to another without changing the contents press **Tab**

■ To view options for a data field together with an explanation, press **F4**

■ To accept the data displayed on the screen and continue, press **Enter.**

The following function keys may appear on data entry screens.

Function Key	Description
F1 - Help	Display context-sensitive help
F3 - Exit	End the current task and return to the screen or menu from which the task was initiated
F4 - Prompt	Display a list of valid options for the current field or command. For certain data items, a pop-up selection window appears
F6 - Add New	Create a new record or data item
F8 - Print	Print the current report or data item
F9 - Retrieve	Retrieve the previously-entered command
F12 - Cancel	Return to the previous screen or menu without updating

New Features and Functionality

Version 1.5

■ Support added for NVARCHAR field type

■ Enhancements made to embedded SQL in RPG

■ Added Bidi String Type option (-1 = NONE) in RDB entry screen

■ The product is bundled with a new JDBC driver for MS Excel (97/2000/XP/2003), CSV, ODF spreadsheet (LibreOffice/OpenOffice) and text files. This driver is an in house development. See Appendix A for a description of how to use it.

Chapter 2: Remote DB Definitions

This chapter describes how to define a remote database. When definitions are activated, they create an RDBDIRE (Remote DB Directory Entry) in the operating system.

Work with Directory Entries

To begin working with directory entries, select **1. Work with Directory Entries** from the main screen. The following Work with Directory Entries screen opens. Directories are marked as Active or --- (deactivated).

```
                        Work with Directory Entries

Type options, press Enter.              Subset  . . .
   1=Select   3=Copy    4=Remove    7=Activate   8=Deactivate

Opt   Status    Directory entry
 █    Active    CRM
      Active    SALES
 _    ---       SHIPMENTS
 _    Active    TESTDB
 _




                                                            Bottom
 F3=Exit    F5=Refresh   F6=Add new    F8=Print        F12=Cancel
 DB Directory Entry deleted.
 Relational database directory entry deactivated.
```

Work with Directory Entries

To view a specific subset of drivers, enter the first alphanumeric characters of the driver in the **Subset by driver** field and press **Enter.** The driver list is redisplayed with results that match your query.

Modifying a Directory Entry

You can update the details of a Directory Entry by highlighting it and choosing **1. Select**. The **Modify Directory Entry** screen appears with the selected directory entry filled in.

Once you modify the directory entry, press **Enter**, then press **Enter** again to confirm your changes.

> **NOTE:** *You are not able to update the Directory Entry Name or Driver.*

```
                          Modify Directory Entry

    Directory Entry . . . . . .   LOGISTICS     Active: Y      (Driver: MSSQL2005  )
    Description . . . . . . . .   This is a MS SQL
    Log . . . . . . . . . . . .   0                    0=Dft, 1=None, 2=Basic, 4=All
    Host or IP  . . . . .<host>   1.1.1.197
    Port  . . . . . . . .<port>    1433
    Catalog . . . . . <catalog>
    Schema  . . . . . .<schema>
    Database  . . . . . . .<db>   AdventureWorks




    URL . . . . . . . . . . . .   jdbc:sqlserver://<host>:<port>;databaseName=<db>
    Auto replacments are:
      <host><port><catalog>
      <schema><db><adl1-4>



    Language Support  . . . . .      4             *AUTO, *NONE, 4-11 for Bidi
    F3=Exit    F4=Prompt     F7=Driver page     F8=Replace driver    F12=Cancel
```

Modify Directory Entry Screen

The following table describes the detailed information you enter to create a new DB driver. Some of the parameters may vary depending on the selected driver.

Parameter	Description
Directory Entry	Name of the directory
Active	Y (yes) or N (no)
Driver	The driver you associated with the new entry
Description	Description of the directory (optional)
Log	0=Global default (this value is taken from System Configuration's General Definitions screen) 1=No log (no data is stored) 2=Connect (the log will store a record of each connection and disconnection from a database) 4=All (the log will store all commands sent; when a Fetch command is sent, it will only store the first in the series)
Host or IP	The address used to access the remote database
Port	The port number associated with the above address required for setting up a connection to the remote database
Catalog	If the database requires a Catalog for the connection, specify it here
Schema	The schema for the remote database
Database	Database name
Additional parameters: SID in this example	Up to four different parameters, based on the selected driver.
URL	Provided by the DB driver provider. May include parameters: <host><ip><user><pwd><catalog><port><schema><adl1-4>
Language Support	*AUTO = Default setting *NONE 4-11 = Based on an IBM setting for specific language support. For more details, see:
F8	Replace Driver = Enables users to replace the driver configuration for this RDB entry

Copying an Existing Directory Entry

You can choose to add a new Directory Entry by copying one that already exists. Copying a directory entry is also the only way you can change the name of an existing directory entry.

1. To copy an existing directory, highlight it and select **3. Copy.** The **Copy DB Directory Entry** screen appears with the selected directory entry already filled in.

2. Enter a new Directory Entry name and press **Enter**, then press **Enter** again to confirm your new entry. All the existing directory entry details are automatically added and the **Work with Directory Entries** screen is redisplayed with the newly created directory entry (deactivated).

Creating a New Directory Entry

You can choose to add a new Directory Entry either by copying one that already exists or by entering all the details on your own.

To add a completely new directory entry, do the following:

1. Select **F6. Add New**. The following **Add New Directory Entry** screen is displayed.

2. Type the new Directory Entry alias name. You can also select **F4. Prompt** (when in the **Directory Entry** field) to display the existing Directory Entry list. If you choose one and press **Enter**, it will then be added to the new **Directory Entry** field.

3. You must now add an existing driver type. Either type it in or select **F4. Prompt** (when in the **Driver** field) to display a list of the existing DB drivers.

4. Click **Enter** to move on to the empty **Add New Directory Entry Details** screen. If the URL had been saved in the driver, it is automatically added. This screen is the same as the Modify Directory Entry Screen above.

```
                       Add New Directory Entry


     Directory Entry . . . . .    █_____
     Driver  . . . . . . . . .    _____










     F3=Exit    F4=Prompt          F12=Cancel
```

Add New Directory Entry

Chapter 3: DB Drivers

Working with Database Drivers

A database driver enables you to access a remote database, first by recognizing it and then by establishing a connection with it.

> **NOTE:** *DB-Gate comes with pre-installed DB drivers. You may add any number of additional drivers or modify the existing ones.*

To set up a database driver, select **11. Work with DB Drivers** from the main menu. The following **Work with DB Drivers** screen with a three-column list of the different types of databases already entered in the system and from which you can choose to create a remote connection. It includes the following details:

■ Driver Name

■ Available – Yes indicated that the driver's **Driver file** parameter (in the Modify DB Driver screen) has been filled in with the path to the jar file on the IFS

■ Description for the driver.

```
                          Work with DB Drivers
                                      Subset by driver  . .  _____
Type options, press Enter.                    by text  . . . .  _____
  1=Select    3=Copy    4=Delete    8=Driver page


Opt Driver    Available
 █  AS400DB2    Yes  DB2 on OS/400 platform
 _  CACHE       -    Cache
 _  DAFFODILLO  -    DaffodilDB Local
 _  DAFFODILSR  -    DaffodilDB Server
 _  DB2         Yes  DB2 for Windows/Linux
 _  DB2JDBC4    Yes  DB2 for Windows/Linux
 _  DERBY       Yes  JavaDB/Derby
 _  FIREBIRD    Yes  Firebird
 _  FRONTBASE   Yes  FrontBase
 _  HSQLDB      Yes  HSQLDB
 _  HSQLDBEMBD  Yes  HSQLDB Embedded
 _  H2_EMBED    Yes  H2 Database Engine (Embedded)
 _  H2_MEM      Yes  H2 Database Engine (In memory mode)
 _  H2_SERVER   Yes  H2 Database Engine (Server mode)
 _                                                        More...

F3=Exit    F6=Add new    F8=Print    F12=Cancel
```

Work with DB Drivers Screen

The following driver configurations are currently supplied alongside the product:

- Cache
- Daffodil
- DB2 for Windows/Linux
- JavaDB/Derby
- Firebird
- Frontbase
- HSQLDB
- Informix
- Mimer
- MS Excel

- MS JDBC
- MS SQL 2005
- MySQL
- Oracle
- Pervasive
- PointBase
- PostgreSQL
- Sybase SQL Anywhere
- Sqlite
- Sybase ASE

If the URL for the driver manufacturer has been saved within the driver's details, you can open the driver's webpage in your browser and read detailed information on the database. To do this, select **8. Driver page** and then press **Enter**.

To view a specific subset of drivers, do one of the following:

- In the **Subset by driver** field, at the top right of the screen, enter the first alphanumeric characters of the driver and press **Enter.** The driver list is redisplayed with results that match your query.

- In the **Subset by text** field, enter any alphanumeric characters you want to match in either the **Driver Name** or **Description** fields and press **Enter.** The driver list is redisplayed with results that match your query.

Modifying a DB Driver

To modify a DB driver, do the following:

1. Highlight the DB driver you want to update and press **1. Select**, then press **Enter**. The **Modify DB Driver** screen opens with the driver's details.
2. Update the fields, then press **Enter**. A confirmation message appears asking if you want to modify any of the entries.
3. Press **Enter** again to save the changes to the driver.

From within the driver page, you can view open the URL for the driver manufacturer to read detailed information on the DB driver by selecting **F7. Driver page**.

To restore the default settings of the current driver, select **F9. Restore Default.**

```
                          Modify DB Driver

Driver . . . . .   DB2         DB2 for Windows/Linux
Driver file  . .   /iSecurity/DB-Gate/Drivers/db2jcc.jar
                   _____
Class  . . . . .   com.ibm.db2.jcc.DB2Driver
                   _____
Driver page  . .   http://www-306.ibm.com/software/data/db2/java
                   _____
Default port . .   50000
Additional parms   Label               Possible values
Parm 1 . .<adl1>   _____ _____
Parm 2 . .<adl2>   _____ _____
Parm 3 . .<adl3>   _____ _____
Parm 4 . .<adl4>   _____ _____
URL dft schema .   jdbc:db2://<host>:<port>/<db>_____
Std replacments:                       _____
<host><db>                             _____
<catalog><port>                        _____
<schema><adl1-4>                       _____


F3=Exit                  F7=Driver page   F9=Restore Default        F12=Cancel
```

Modify DB Driver Screen

The following table describes the information in the DB driver screen.

Parameter	Description
Driver	Driver's name and description. It will appear in the DB Drivers list when configuring a connection.
Driver file	Path to the jar file on the IFS that contains the JDBC driver for this database.
Class	JDBC driver class name.
Driver page	URL for the driver developer's webpage.
Default port	The default port to use when setting up a connection.
Additional Parameters	You may define up to four parameters which are specific for this driver. The definition includes the label, as well as a short explanation or the possible values. Parameters which are defined here will be displayed when this driver is selected.

Additional Commands	
F4	When in the Driver field, displays a Select DB Driver window with the option to select a specific DB Driver. After entering 1. Select, the window closes and your selection is displayed in the Driver field.
F7	Once the Driver page has been entered, selecting F7 opens the URL in your default browser.
F9	Restores the original definition of a driver if it was supplied alongside the DB-Gate and replaces the current settings.

Copying a DB Driver

To copy a DB driver, do the following:

1. Select the DB driver you want to copy and press **1. Copy**, then press **Enter**. The **Copy DB Driver** screen opens with the name and description of the selected driver.

2. In the new Driver field, change the name, then press **Enter**.

3. After the confirmation message appears asking if you want to modify any of the entries, press **Enter** again to save the new driver.

```
                          Copy DB Driver

Type choices, press Enter.


From:
  Driver . . . . . . . . . . DAFFODILSR

  Description  . . . . . . . DaffodilDB Server


To:
  New Driver . . . . . . . . DAFFODILSR









F3=Exit     F4=Prompt         F12=Cancel


```

Copy DB Driver Screen

Adding a New DB Driver

To add a new DB driver, do the following:

1. From the **Work with DB Drivers** screen, press **F6**. An empty **Add New DB Driver** screen appears.
2. After you complete the fields, press **Enter**.
3. After the confirmation message appears asking if you want to modify any of the entries, press **Enter** again to save the new DB driver.

Deleting a DB Driver

To delete a DB driver from the list, do the following:

1. Select the DB driver and then select **4. Delete**. The driver's page is displayed.
2. Press **Enter** to confirm the delete request. The driver is deleted.

Drivers & Licenses Folders

To view and update a connection to a remote database, select **15. Drivers & Licenses Folders** from the main screen. The **Work with Object Links** screen opens. This resource screen lets you see the paths to the third party drivers and their licenses.

```
                        Work with Object Links


 Directory  . . . . :   /iSecurity/DB-Gate/Drivers/./.


 Type options, press Enter.
   2=Edit   3=Copy   4=Remove   5=Display   7=Rename   8=Display attributes
   11=Change current directory ...


 Opt    Object link          Type              Attribute    Text
        .                    DIR
 __     ..                   DIR
 █      db2                  DIR
 __     derby                DIR
 __     excel                DIR
 __     firebird             DIR
 __     hsqldb               DIR
 __     h2sql                DIR
 __     jtds                 DIR
                                                               More...
 Parameters or command
 ===>
 F3=Exit   F4=Prompt   F5=Refresh   F9=Retrieve   F12=Cancel   F17=Position to
 F22=Display entire field           F23=More options
```

Work with Object Links Screen

The drivers belong to the official owners. They are supplied alongside the product for convenience. Next to each driver you may find the actual license under which it is supplied. These drivers have been downloaded and are supplied by Raz-Lee with the understanding that they may be supplied in this way.

Chapter 4: DB-Gate Log

DB-Gate's Display Log shows the contents of the history log, which saves various data gathered from the different directory entries as you have defined them, in a standard format and using basic filter criteria. The "Backward Glance" feature lets you look at the last several minutes of activity without the need to define specific time or date parameters.

To begin filtering log entries, select **41. Display Log** from the main menu. The following **Display DB-Gate Log Entries** screen is displayed.

```
             Display DB-Gate Log Entries (DSPDBLOG)

 Type choices, press Enter.

 Display last minutes . . . . . .   *BYTIME       Number, *BYTIME
 Starting date and time:
   Starting date  . . . . . . . .   *CURRENT      Date, *CURRENT, *START...
   Starting time  . . . . . . . .   000000        Time
 Ending date and time:
   Ending date  . . . . . . . . .   *CURRENT      Date, *CURRENT, *YESTERDAY...
   Ending time  . . . . . . . . .   235959        Time
 User profile . . . . . . . . . .   *ALL          Name, generic*, *ALL
 Remote user profile  . . . . . .   *ALL          Name, generic*, *ALL
 Relational DB Entry  . . . . . .   *ALL          Name, generic*, *ALL
 SQL Operation  . . . . . . . . .   *ALL          Name, *ALL, ALTER, CLOSE...
 SQL State  . . . . . . . . . . .   *ALL          Character, generic*, *ALL
 SQL Error Code . . . . . . . . .   *ALL          Number, *ERR, *NOERR, *ALL
 SQL Statement contains . . . . .   *ALL


                                                                   More...
 F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel    F13=How to use this display
 F24=More keys
```

Display DB-Gate Log Entries Screen

```
                    Display DB-Gate Log Entries (DSPDBLOG)

 Type choices, press Enter.

 SQL Message contains . . . . . .    ▓ALL


 From job name  . . . . . . . . .    *ALL          Name, generic*, *ALL
   User . . . . . . . . . . . . .      *ALL          Name, generic*, *ALL
   Number . . . . . . . . . . . .      *ALL          000000-999999, *ALL
 From program name  . . . . . . .    *ALL          Name, generic*, *ALL
   Library  . . . . . . . . . . .      *ALL          Name, generic*, *ALL
 Number of records to process . .    *NOMAX        Number, *NOMAX
 Output . . . . . . . . . . . . .    *             *, *PRINT, *OUTFILE




                                                                 Bottom
 F3=Exit    F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
 F24=More keys
```

Display DB-Gate Log Entries Screen (Cont')

The following table describes the various settings you can define to filter log entries.

Parameter	Description
Display last minutes	Number, *BYTIME This "Backward Glance" feature lets you enter the number of minutes of recent activity you want to view, without the need to define any other time or date parameters. The feature is particularly helpful when trying to clarify the cause of problems
Starting date	Choose from: Current, Start, Yesterday, Week Start, Previous Weeks, Month Start, Previous Months, Year Start, Previous Years, and each day of the week
Starting time	00:00:00 format
Ending date	Same options as Starting date
Ending time	00:00:00 format
User profile	All (default) or a specific user profile on the AS/400
Remote user profile	All (default) or a specific user profile on the remote database
Relational DB Entry	All (default) or a specific remote DB entry

Parameter	Description
SQL Operation	All (default) or a specific SQL operation that is used at the beginning of an SQL statement (e.g., CONNECT, CREATE, DROP, etc.)
SQL State	All (default) or a specific state
SQL Error Code	All (default), a specific error code number or name that describes the problem, or entries without any error code
SQL Statement contains	All (default) or a specific SQL statement
SQL Message contains	All (default) or a specific error message that is associated with an error code
From job name	All (default) or specific job
User	All (default) or specific user
Number	All (default) or a specific number
From program name	All (default) or the program in the AS/400 that created this log
Library	All (default) or specific library of the program name
Number of records to process	No Maximum amount (NOMAX) or a specific number
Output	On the screen (*), Printed on one of the defined printers. If you enter Outfile, you must then define the following additional parameters: File to receive output, Library, Member to receive output, Replace or add records

Once you have defined the filter for the log, press **Enter** to view the results. The following screen is an example of the output displayed.

```
                        Display DB Gate Log
Log information is available from 22/03/12
DB -> WAREHOUSE PREPARE SQLERR -204 [SQL0204] DEMOPF21 in ILAN type *FILE not
DB -> WAREHOUSE PREPARE SQLERR -104 [SQL0104] Token FROM1 was not valid. Valid
DB -> WAREHOUSE PREPARE SQLERR -204 [SQL0204] DEMOPF21 in ILAN type *FILE not
SASHA -> CRM PREPARE SQLERR 1146 Table 'ilan.demopf21' doesn't exist: select *
SASHA -> CRM PREPARE SQLERR 1146 Table 'ilan.demopf21' doesn't exist: select *
SASHA -> CRM PREPARE SQLERR -1 Table 'ilan.demopf21' doesn't exist: select * f
DB -> WAREHOUSE PREPARE SQLERR -204 [SQL0204] DEMOPF21 in ILAN type *FILE not
DB -> WAREHOUSE PREPARE SQLERR -204 [SQL0204] DEMOPF21 in ILAN type *FILE not
SASHA -> CRM PREPARE SQLERR -204 Table 'ilan.demopf21' doesn't exist: select *
SASHA -> CRM PREPARE SQLERR -204 You have an error in your SQL syntax; check t
SASHA -> CRM PREPARE SQLERR -204 You have an error in your SQL syntax; check t
DB -> WAREHOUSE PREPARE SQLERR -104 [SQL0104] Token FROM1 was not valid. Valid
SASHA -> CRM PREPARE SQLERR -204 You have an error in your SQL syntax; check t




                                                                  Bottom
F3=Exit                 F10=Entire-Entry              F17=Top  F18=Bottom

```

Display DB-Gate Log

To view further details on the output, select **F10. Entire Entry**. The following screen appears.

```
                        Additional Entry Information       System: S520


 Remote DB Entry  . . . : WAREHOUSE        From User Profile  . . : DB
 Date sent  . . . . . . : 12/03/22         Time sent  . . . . . . : 10:23:47
 From Job . . . . . . . : QZRCSRVS/QUSER/215534        Program : DBCRTLGR
 Remote User  . . . . . : DB                           Library: SMZB
 Remote IP  . . . . . . :                              SQL Opr.: PREPARE
 SQL State  . . . . . . : 42704                        SQL Err.:      204-
 SQL Error Message  . . : [SQL0204] DEMOPF21 in ILAN type *FILE not found.
SQL Statement:
select * from ilan.demopf21














 F3=Exit                              F12=Cancel

```

Additional Entry Information from DB-Gate Log

Chapter 5: Remote User ID

This section details how to work with server authentications. The parameters and settings rely on standard IBM commands, such as ADDSVRAUTE and CHGSVRAUTE, which are described in detail in IBM's literature.

At the time that authentication information is required, the data entered here will be used. This eliminates the need for repetitive entries of the authentication information.

Injection of Remote User IDs

To set up auto injection of remote user IDs, select **21. Work with Server Authentication** from the main menu and press **Enter**. The following **Work with Server Authentication Entries** screen is displayed.

```
                   Work with Server Authentication Entries
                                        Subset by user . . . .  _____
Type options, press Enter.                      server . . .    _____
  1=Select    4=Remove                          remote user.    _____

Opt  User        Server                   Remote user            Password
 █   AU          CRM1                     SASHA2
     AU          RDBIMP                   QSECOFR                *YES
 _   AU          S520DDM                  QSECOFR                *YES
 _   AV          testrdb10                AV
 _   DB          CRM                      SASHA                  *YES
 _   DB          LOGISTICS                sasha                  *YES
 _   DB          SALES                    tm1                    *YES
 _   DB2ADMIN    acum_db                  DB2ADMIN               *YES
 _   DB2ADMIN    ACUMSDB                  db2admin               *YES
 _   DPROP       ODED                     DPROP
 _   DPROP       REPLICA                  ODED
 _   DPROP       SHI                      DPROP
 _   DPROP       192.168.168.182          DPROP
 _   DPROP       192.168.168.4            DPROP
                                                                 More...

F3=Exit    F6=Add New    F12=Cancel
```

Work with Server Authentication Entries Screen

To view a specific subset of server authentication entries, select one of the following subset fields: **User**, **Server** or **Remote User**. Enter the first alphanumeric characters of the entry and press **Enter.** The list is redisplayed with results that match your query.

Modifying a Server Authentication Entry

To modify a server authentication entry, do the following:

1. Highlight the server authentication entry that you want to update in the **Work with Server Authentication Entries** screen and press **1. Select**, then press **Enter**.

2. When the **Modify User Authentication Entry** screen opens, update the User profile, Server and Remote user ID details displayed.

3. When you are done, press **Enter**. After the confirmation message appears, press **Enter** again to save your settings.

```
                        Modify User Authentication Entry

 Type choices, press Enter.

 User profile . . . . . . . . .   AU              Name
 Server . . . . . . . . . . . .   CRM1
 Remote user ID . . . . . . . .   SASHA2
 Password or *NONE  . . . . . .



 DB-Gate restricts Server to 18 characters. User and Password are restricted
 to 10 characters.






 F3=Exit              F12=Cancel

```

Modify User Authentication Entry Screen

Adding a New Server Authentication Entry

To add a new server authentication entry, press **F6**. **Add New**. An empty **Add User Authentication Entry** screen appears.

Chapter 6: Test Drive

This section includes the various ways you can start SQL and work with SQL programs. These features rely on standard IBM commands, which are described in detail in IBM literature.

Starting SQL

To begin writing SQL commands directly from your AS/400, select **51. Start SQL** from the main menu and press **Enter**. The following **Enter SQL Statements** screen is displayed.

```
                          Enter SQL Statements

Type SQL statement, press Enter.
   > CONNECT TO SALES
     Current connection is to relational database SALES.
   > SELECT FIRST_NAME,LAST_NAME, EMAIL,PHONE_NUMBER FROM
     "HR"."EMPLOYEES" WHERE FIRST_NAME BETWEEN 'Jack' AND 'Oliver'
     SELECT statement run complete.
===> █_____
     _____
     _____
     _____
     _____
     _____
     _____
     _____
     _____
     _____
     _____
     _____
     _____
                                                             Bottom
F3=Exit    F4=Prompt    F6=Insert line    F9=Retrieve    F10=Copy line
F12=Cancel              F13=Services      F24=More keys
```

Enter SQL Statements Screen

The Enter SQL Statements display is the main screen for interactive Structured Query Language (SQL). From it you can type and run SQL statements. SQL messages also appear on this screen.

Working with SQL Program Sources

To begin working with SQL Program Sources, select **55. Work with SQL* program sources** from the main screen and press **Enter**. The following **Work with Members Using PDM** screen is displayed.

```
                    Work with Members Using PDM (WRKMBRPDM)

 Type choices, press Enter.

 File . . . . . . . . . . . . . .   *PRV            *PRV, name
   Library  . . . . . . . . . . .                   *PRV, name, *LIBL, *CURLIB
 Member . . . . . . . . . . . . .   *ALL            *ALL, name, *generic*...
 Member type  . . . . . . . . . > SQL*            *ALL, type, *generic*...








                                                                      Bottom
 F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
 F24=More keys

```

Work with Members Using PDM Screen

7

Chapter 7: System Configuration

DB-Gate is ready-to-run right out of the box. You should review a few system configuration parameters that control important features prior to using the product for the first time.

It should be pointed out that there is no "typical" or "optimal" configuration for a connectivity product such as DB-Gate. Each installation or application has different operational criteria and security needs. For example, the log requirements for a large manufacturing environment may be quite different from those for a bank, a software developer or a service organization.

To begin system configuration, Select **81. System Configuration** from the main screen and press Enter. The following **DB Directory Entry System Configuration** screen appears.

```
 DBPARMR              DB Directory Entry System Configuration    25/03/12 12:18:36


  Select one of the following:


  DB-Gate
   1. General Definitions



   9. Log Retention




                                        General
                                          98. Driver Licenses
  Selection ===>   █                      99. Copyright Notice

  Release ID . . . . . . . . . . . . .  01.0  12-03-20    44DE466   520 7459
  Authorization code . . . . . . . . .  B01203731542                      1



  F3=Exit    F22=Enter Authorization Code                    F12=Cancel

```

DB Directory and System Configuration Screen

NOTE: *After you modify any of the parameters accessible from this menu, the message "**Modify data, or press Enter**" appears upon return to the menu.*

General Definitions

To change the global settings of DB-Gate, do the following:

1. Select **1. General Definitions** from the **System Configuration** screen. The following **General Definitions** screen appears.

2. Enter a **Log level** setting from one of the following options:

Option	Description
1=No log	No data is stored
2=Connect	The log will store a record of each connection and disconnection from a database
4=All	The log will store all commands sent; when a Fetch command is sent, it will only store the first in the series

```
                          General Definitions              25/03/12 10:37:16


  Type options, press Enter.

  Log level . . . . . . . . . . . . . .  1        1=No Log
                                                  2=Connects only
                                                  4=All
  Notes:
  All errors are logged, regardless of this setting.
  For 4=All, only the first FETCH is logged.













  F3=Exit    F12=Cancel
```

General Definitions Screen

> **NOTE:** *When you select the 0=Global default setting for a specific directory entry, it will take the setting you define on this screen.*

3. When you are done, press **Enter**. After the confirmation message appears, press **Enter** again to save your settings.

Log Retention

Setting DB Log Retention Parameters

Log Retention parameters govern the retention and backup of the DB-Gate history log files. In order to preserve desk storage capacity and improve query response time, you should retain transactions for the minimum period necessary to maintain an effective audit program.

The recommended initial settings are shown below.

To set the log retention periods, do the following:

1. Select **9. Log Retention** from the **DB Directory Entry System Configuration** screen. The following **DB Log Retention** screen appears.
2. Enter the parameters as defined in the table below.
3. When you are done, press **Enter**. After the confirmation message appears, press **Enter** again to save your settings.

```
                          DB Log Retention              25/03/12 10:40:10


Type options, press Enter.


  Data retention period (days)  . .  30            Days, 99=*NOMAX
  Backup program for data . . . . .  *NONE         Name, *STD, *NONE
    Backup program library  . . . .  _____

  You may specify a backup program to run automatically before deleting old
  data. This program runs prior to automatic deletion of data whenever the
  retention period expires.

  The *STD program is SMZB/DBSOURCE DBDBGBKP.








 F3=Exit    F12=Cancel

```

DB Log Retention Screen

Parameter	Description
Data retention period	The number of days that the queries are retained. At the end of this period, queries are purged from the log. Enter 99 to retain all data indefinitely.
Backup Program for data	Enter the name of the backup program you wish to use, type *STD to use the standard backup program or *NONE for no backup.
Library	Enter the name of the library where it is located.

Chapter 8: Maintenance Menu

The Maintenance Menu lets you set and display global definitions for DB-Gate. To open it, select **82. Maintenance Menu** from the main menu.

```
DBMINTM                        Maintenance Menu              iSecurity/DB-Gate
                                                            System:  S520
Select one of the following:                               *Patent-Pending*

Definitions                              General
 5. Dispaly DB-Gate Definitions          52. Check Locks
                                         53. Add DB-Gate to Java CLASSPATH



Operators                                Journal Definition Files
11. Work with Operators                  71. Add Journal
                                         72. Remove Journal
                                         79. Display Journal



                                         Uninstall
                                         91. Uninstall


Selection or command
===> █


F3=Exit   F4=Prompt   F9=Retrieve   F12=Cancel
F13=Information Assistant  F16=AS/400 main menu
```

Maintenance Menu Screen

Display DB-Gate Definitions

To print the definitions that you entered for DB-Gate, do the following:

4. From the Maintenance Menu screen, select **5. Display DB-Gate Definitions**. The following screen appears.

5. When you are done, press **Enter**. After the confirmation message appears, press **Enter** again to save your settings.

```
                    Display DB-Gate Definitions (DSPDBDFN)

 Type choices, press Enter.

 Report type  . . . . . . . . . . >  *DBENTRY        *ALL, *DBENTRY, *DBDRVR
 From item  . . . . . . . . . . .    *ALL            Character value, *ALL, *START
 To item  . . . . . . . . . . . .    *SAME           Character value, *ONLY, *LAST
 Format . . . . . . . . . . . . .    *DETAILS        *LIST, *DETAILS
 Output . . . . . . . . . . . . .    *               *, *PRINT









                                                                      Bottom
 F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel    F13=How to use this display
 F24=More keys
```

Display DB-Gate Definitions Screen

Parameter	Description
Report Type	*ALL = All of the following options *DBENTRY = The definitions for the Directory Entries *DBDRVR = The definitions for the DB Drivers
From item	Character value *All *Start = From the beginning of all values
To item	Character value *Only *Last
Format	*List = Short form *Details = Full form
Output	* = Screen *Print = Spool

Work with Operators

The operators' authorities' management is maintained in one place for this product. It also offers the site a possibility of implementing a second password to protect use of the product.

There is one default group: *AUD#SECAD. It allows all users both *AUDIT and *SECADM special authorities. By default, this group has full access (Read and Write) to all the product's components.

You may add more operators, delete them, and give them authorities and passwords according to your own judgment. You even have the option to make the new operators' definitions apply to all your systems; therefore, upon import, they will work on every system.

To view existing operator's authorities and modify them, do the following.

From the **Maintenance Menu**, select **11. Work with Operators**.

```
                          Work with Operators


Type options, press Enter.
  1=Select    4=Delete

                          Authority level: 1=*USE    9=*FULL

Opt User            System     DB  Adm
 ▌  *AUD#SECAD      S520        9   9
 _  CS              S520            9
 _  GS              S520        9   9
 _  OS              S520        1   1




                                                          Bottom
 DB=DB-Gate        Adm=Administrator


 F3=Exit     F6=Add new     F8=Print    F11=*SECADM/*AUDIT authority    F12=Cancel

```

Work with Operators

To modify an operator, highlight it and choose **1. Select**.

To add a new operator, press **F6**.

```
                          Modify Operator

Type choices, press Enter.


Operator  . . . . . . . . .    *AUD#SECAD
System  . . . . . . . . . .    S520             *ALL, Name
Password  . . . . . . . . .    *SAME            Name, *SAME, *BLANK


Authorities by subject:
DB-Gate . . . . . . . . . .    9                1=*USE, 9=*FULL
Product Administrator . . .    9                1=*USE, 9=*FULL












F3=Exit    F12=Cancel


```

Modify Operator Screen

Parameter	Description
Operator	The Operator can be a user or group profile. DG Gate provides one type of Operator group: ***AUD#SECAD**. This group has full access (Read and Write) to all parts of DB-Gate.
System	*ALL Name
Password	Name = Password *SAME = Same as previous password when edited *BLANK = No password
DB-Gate	User of the product 1=*USE (Read authority only) 9=*FULL (Read and Write authority)
Product Administrator	Person responsible for backups, setting authorization codes, etc. 1=*USE (Read authority only) 9=*FULL (Read and Write authority)

Check Locks

To verify if objects are locked in the system, select **52. Check Locks** from the **Maintenance Menu**.

```
GSLCKMNU                         Check Locks                       iSecurity
                                                          System:   S520
Select one of the following:

Check Locks
   1. Data Base Files

   -. Display Files
      End this session. Enter CHKSECLCK OBJTYPE(*DSPF) from a new session.

   -. All File Types
      End this session. Enter CHKSECLCK OBJTYPE(*ALL ) from a new session.




Selection or command
===> █
_____

F3=Exit   F4=Prompt   F9=Retrieve   F12=Cancel
F13=Information Assistant  F16=AS/400 main menu
```

Check Locks Screen

Add DB-Gate to Java CLASSPATH

Use this tool if you suspect that the Java components required by the system cannot be found. Using it will define the location of the required components in the CLASSPATH (which is similar to *LIBL for Java).

Journal Definition Files

A journal file records changes made to definitions in the data library.

Adding a Journal

To add a journal, select option **71. Add Journal** from the **Maintenance Menu** screen. The following **Create Journal – Confirmation** screen appears. Press **Enter** to confirm.

```
DBMINTM                          Maintenance Menu              iSecurity/DB-Gate
                                                             System:   S520
Select   ...................................................... Pending*
         :  █               Create Journal - Confirmation       :
Definit :                                                       :
 5. Dis :    You are about to start journaling the product files. :
         :    The journal receivers will be created in library  : TH
         :    SMZBJRND . If this library does not exist, it will :
         :    be automatically created.                         :
Operato :                                                       :
11. Wor :    If you wish to create the library in a specific ASP, :
         :    you should press F3=Exit, create this library, and :
         :    run again this option.                            :
         :                                                       :
         :    Press Enter to start journaling, F3 to Exit.      :
         :                                                       :
         :    F3=Exit                                           :
         :                                                       :
Selecti :...............................................:
===> 71

F3=Exit    F4=Prompt    F9=Retrieve    F12=Cancel
F13=Information Assistant   F16=AS/400 main menu
```

Create Journal – Confirmation Screen

Removing Journal

To remove a journal, select option **72. Remove Journal** from the **Maintenance Menu** screen. The following **End Journal – Confirmation** screen appears. Press **Enter** to confirm.

```
DBMINTM                         Maintenance Menu                 iSecurity/DB-Gate
                                                                 System:  S520
Select   ................................................................. Pending*
      :  █              End Journal - Confirmation               :
Definit :                                                        :
 5. Dis :    You are about to end journaling the product files.  :
        :    The journaling will stop in library SMZBJRND         : TH
        :                                                        :
        :    Press Enter to end journaling.                      :
Operato :                                                        :
11. Wor :    F3=Exit                                             :
        :                                                        :
        :.............................................................:



                                   Uninstall
                                   91. Uninstall


Selection or command
===> 72
_____

F3=Exit    F4=Prompt    F9=Retrieve    F12=Cancel
F13=Information Assistant   F16=AS/400 main menu

```

End Journal - Confirmation Screen

Displaying a Journal

To view journaled files, select option **79. Display Journal** from the **Maintenance Menu** screen. The following **Display Journal Entries** screen appears.

```
                        Display Journal Entries

  Journal  . . . . . . :    SMZ4            Library  . . . . . . :    SMZ4DTA


  Type options, press Enter.
     5=Display entire entry



  Opt      Sequence   Code   Type   Object      Library     Job         Time
  █               1    J      PR                             QPADEV000V  13:41:03
  _               2    D      JF     AUACTION2P  SMZ4DTA     QPADEV000V  13:41:09
  _               3    F      JM     AUACTION2P  SMZ4DTA     QPADEV000V  13:41:09
  _               4    D      JF     AUACTNL     SMZ4DTA     QPADEV000V  13:41:09
  _               5    F      JM     AUACTNL     SMZ4DTA     QPADEV000V  13:41:09
  _               6    D      JF     AUACTNP     SMZ4DTA     QPADEV000V  13:41:10
  _               7    F      JM     AUACTNP     SMZ4DTA     QPADEV000V  13:41:10
  _               8    D      JF     AUADPAP     SMZ4DTA     QPADEV000V  13:41:10
  _               9    F      JM     AUADPAP     SMZ4DTA     QPADEV000V  13:41:10
  _              10    D      JF     AUADPLP     SMZ4DTA     QPADEV000V  13:41:10
  _              11    F      JM     AUADPLP     SMZ4DTA     QPADEV000V  13:41:10
  _              12    D      JF     AUAUDOP     SMZ4DTA     QPADEV000V  13:41:11
                                                                        More...

  F3=Exit    F12=Cancel
```

Display Journal Entries

Uninstall

Use the Uninstall feature to remove DB-Gate from your computer.

Select **91. Uninstall** from the **Maintenance Menu** and follow the directions that follow on the **Uninstall SECURITYBP** screen.

Appendix A: JDBC Driver for Excel, CSV, ODS and Text Files

Beginning from version 1.5, DB-Gate includes an internal JDBC driver for MS Excel (97/2000/XP/2003), comma-separated values, ODF spreadsheet (LibreOffice/OpenOffice) and text files.

Adding an Entry

1. To add an entry, type STRDB, then select option 1. Work with Directory Entries.

2. Press F6, give it a name and point it to the supplied PC_FILE driver. Press Enter.

3. Set log level and language support if needed and confirm. The entry is activated and available for use.

```
                          Add New Directory Entry


Directory Entry . . . . . .    PC
Driver  . . . . . . . . . .    PC_FILE              F4=Prompt
```

The supplied driver in option #11 (no editing is needed here):

```
Opt Driver    Available
 _   ORACLE_SID   Yes   Oracle SID
 _   ORACLE_SRV   Yes   Oracle Service
 _   ORACLE_TNS   Yes   Oracle TNS
 _   PC_FILE      Yes   CSV, Microsoft Excel, Text, ODF Spreadsheet, XML
 _   PERVASIVE    -     Pervasive
 _   POINTBASEL   Yes   PointBase Local
 _   POINTBASES   Yes   PointBase Server
```

The driver operates based on target file's extension:

- **xls** for MS Excel
- **csv** for comma-separated values
- **ods** for ODF spreadsheet
- **txt** and any other extension is treated as text file.

Working with the JDBC Driver

4. Connect the entry (no user/password is required):

   CONNECT TO PC

5. Complete the following steps:

   A. An SQL 'COMMENT ON' statement:

   COMMENT ON QGPL.MY_TABLE IS 'file:///tmp/customers.xls'

   One can also use:

   COMMENT ON **QTEMP.MY_TABLE** IS...

        or

   COMMENT ON **MY_TABLE** IS...

   In both cases, the file **MY_TABLE** is created in an internal **QTEMP** library. This is <u>not to be confused</u> with the current Job's **QTEMP** lib.

   Also, when issuing the **SELECT** statement the **QTEMP** library <u>must</u> be specified:

   SELECT * FROM **QTEMP.MY_TABLE**

   When completed, the file QGPL/MY_TABLE is created and available with the data.

   B. An SQL 'SELECT' statement:

   SELECT * FROM QGPL.MY_TABLE

The driver accesses the source PC file in a read only manner.

Excel sheets can be accessed by specifying the sheet number in the 'COMMENT ON' statement.

Example:

COMMENT ON QGPL.MY_TABLE IS 'file:///tmp/customers.xls@2'

On this example, the file is **customers.xls** and the query targets the second sheet **@2**.

The first sheet is '@1'.

Tables embedded in ODF Text Documents (LibreOffice/OpenOffice) can be accessed in the same manner as sheets on Excel spreadsheet.

Access Protocols Examples

Function Key	Description
File	Mainly for accessing files in the IFS file system: COMMENT ON QGPL.MY_TABLE IS 'file:///tmp/customers.xls'
HTTP	Mainly for the web COMMENT ON QGPL.MY_TABLE IS 'http://www.razlee.info/gui/db_gate/ms.xls'
FTP	COMMENT ON QGPL.MY_TABLE IS 'ftp://myserver.com/readme.txt'
SMB	MS Windows shares COMMENT ON QGPL.MY_TABLE IS 'smb://192.168.1.181/shareddocs/sales.csv'